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**The effects of peer modeling and adult presence on the  
donations of three age groups of children**

Resnikoff, AnnaMarie DiIorio, Ph.D.

City University of New York, 1988

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THE EFFECTS OF PEER MODELING AND ADULT PRESENCE  
ON THE DONATIONS OF THREE AGE GROUPS OF CHILDREN

BY

ANNAMARIE RESNIKOFF

A dissertation submitted to the graduate Faculty in  
Educational Psychology in partial fulfillment of  
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Abstract

THE EFFECTS OF PEER MODELING AND ADULT PRESENCE ON THE  
DONATIONS OF THREE AGE GROUPS OF CHILDREN

by

AnnaMarie Resnikoff

Advisor: Professor Barry J. Zimmerman

This study sought to clarify the effects of modeling, rationales, and children's age upon their donations and accompanying justifications. Although the social learning researchers have studied modeling and preaching influences on children's donation, questions about how specific rationales affect prosocial behavior remain unanswered. In addition, little attention has been given to the issue of a child's developmental stage on their observational learning of prosocial behavior. Recently Zimmerman (1982) has proposed a three stage developmental model that seeks to explain children's behavioral functioning as well as their cognitive and affective processes. The present investigation sought to

examine the validity of selected parts of this formulation. A factorial design was employed with 3 age groups, 4 modeling conditions and 2 levels of experimenter presence. A monetary donation task was used as a measure of prosocial behavior of 120 boys and girls. A young female model's type of reasoning was studied along with her donation of money as dimensions of social learning. The results indicated age related increases in children's donating. It was found that the donations of children in 8-10 year old age groups were most influenced by models who gave social rules. The effects of the presence of the experimenter was greater for the 8-to 10-year-old children than for the 4- to 6-year-old or 12- to 14-year-old youngsters. As predicted, 4- to 6-year-old children's prosocial reasoning was hedonistic, 8- to 10-year-olds was approval oriented and 12- to 14-year olds was concerned with mutual benefit. These results were interpreted as providing support for Zimmerman's model.

DEDICATION

To the memory of my daughter, Elizabeth  
Her strength was an inspiration to me.

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## Chapter 1

### Introduction

The role of socializing agents on children's prosocial development has long been of interest to psychologists and educators. To date, two theoretical views have dominated research on children's prosocial development. One view, a cognitive stage formulation, has postulated age-related changes in children's cognitive structures as determinants of their prosocial responding. A second view, a social learning formulation, has theorized that social processes such as modeling and tuition can influence children's development of prosocial functioning.

Although these views are often presented as antithetical, it is conceivable that both may be in part correct. Although the effects of modeling and verbalization on prosocial development have been frequently studied, questions about how specific social experiences affect the prosocial behavior of children at different stages of prosocial development remain unanswered. Zimmerman (1982) has recently proposed a social learning formulation that involves three stages in prosocial development. The present study sought to test his formulation.

In past years, researchers interested in children's moral development have studied antisocial behaviors such as aggression, dishonesty and yielding to temptation. Until the 1970's, the study of children's prosocial behaviors had received relatively little attention, however, during the past decade, researchers have become interested in this topic.

Particular attention has been devoted to children's helping behavior as an index of their prosocial functioning. This focus on "helping" responses was predicated on Wispé's (1972) lexical definition of prosocial behavior as that which is "expected to produce or maintain the physical and psychological well being and the integrity of the other person(s) involved"(p.7). In essence, this definition refers to behavior which benefits another person. Bar Tal (1980) has used a donation task as a direct measure of such prosocial behavior.

#### Contemporary Theories of Prosocial Development

Research on age-related changes in children's prosocial functioning has been dominated by cognitive structural stage views. Initially, Piaget (1932) proposed that moral development was a two stage process. Later, Kohlberg (1969) developed a six stage theory of moral reasoning. Neither of these stage theories was developed to describe the prosocial

behavior of children in real world situations. Rather, Piaget and Kohlberg sought to study the prohibition-oriented reasoning of children in various hypothetical situations presented in story form. Both theorists stressed cognitive or logical factors as determinants of moral functioning. Other closely associated formulations (vide Hoffman, 1970) have stressed the importance of such affective processes as empathy and egocentrism.

To date, critics have pointed to several significant problems with cognitive structural approaches. Perhaps most significant was the reliance of these stage researchers on hypothetical stories to measure prosocial functioning (Eisenberg-Berg & Hand, 1979, 1980, 1983). The relationship of verbally presented situations to real world functioning is a significant source of concern. Another problem with the cognitive structural theory has to do with a lack of agreement by different theorists concerning the definition of stages. Since stage estimates ranged from 2 to 6, there is a need to outline a theory that integrates these formulations into a common set of stages and to relate children's developmental stage to their prosocial behavior in non-hypothetical settings. A final problem is that most definitions of stages derived from hypothetical stories are not directly useful in classifying children's prosocial

functioning in real world contexts.

Some progress in measuring stages of prosocial functioning behaviorally has been reported. Bar-Tal, Raviv and Sharabany (1977) have described six developmental stages in terms of external social and reinforcement conditions. Bar Tal's stages include: Stage 1. Compliance to obtain or avoid concrete outcomes. The child seeks a concrete reward or avoids punishment. Stage 2. Social compliance. The child will help in order to comply with the demands of an authority. Stage 3. Internal initiative with concrete reward. The child is aware of the needs of others and expects a concrete, defined reward in return. Stage 4. Normative Behavior. The child will help in order to gain the social approval of others. At this stage, the child can feel empathic toward others. Stage 5. Generalized reciprocity. The child will help because she/he believes that one day she/he will be helped in return. Stage 6. Altruism. The child will help under voluntary conditions, aimed to benefit another and without expectation of external rewards.

According to Bar Tal et al., children of different developmental stages will perform helping acts under different conditions (mostly in compliance with external authority). As youngsters develop, their cognitive skills such as the ability to delay gratification, to assume the

perspective of others, to consider alternative courses of action, or to reason morally undergo qualitative improvements. They theorize that less external structuring is necessary to instigate prosocial responding as children's cognitive skills emerge. A particularly attractive feature of Bar Tal's (1980) theory is that it deals with a neglected dimension of children's prosocial stage development--their actions. His formulation augments Piaget's and Kohlberg's stage theories which focused exclusively upon verbal explanations.

Similar to Bar Tal's et al. (1977) approach, social learning views of prosocial development focus upon the role of: (a) situational determinants of moral reasoning and behavior; (b) people's actions as well as their reasoning; (c) modeled cultural and subcultural norms; and (d) actual and expected consequences.

Social learning theorists such as Bandura (1977) assume that there is a mutual interdependence between personal states and overt actions, and environmental stimuli. Their view is based on research that has shown modeling to have a powerful influence upon children's functioning. A model's demonstration of abstract concepts and principles, problem-solving strategies and creativity have been found to influence observers' thoughts as well as behavior (Zimmerman

and Rosenthal, 1974; Rosenthal and Zimmerman, 1978).

According to Bandura (1977), Liebert (1979), Zimmerman and Koussa (1975; 1979) children internalize sets of moral codes and values through observation as well as direct experience.

From this perspective, Bandura (1982), Mischel (1983) and Zimmerman (1982) have increasingly emphasized the importance of an individual's cognitive control of his or her own behavior. Such aspects of the individual's cognitive activity as attention, memory, symbolic coding, expectations and self-regulatory processes are assumed to play a prominent role in recent social learning interpretations of behavioral change.

Several critics of social learning approaches have pointed out that most modeling studies have not been explicitly developmental in approach. For example, Yando, Seitz and Ziegler (1978) commented that "learning theorists tend to view behavior as a function of forces applied to the child, whereas developmentalists tend to focus on sequential changes in the psychological structure of the child himself" (p.234). Although developmental factors have not been their primary focus, social learning theorists have acknowledged the importance of developmental changes in functioning (Zimmerman, 1983). Age-correlated changes in responding have been attributed by the social learning theorists (Bandura,

1986) to increases in children's knowledge and exposure to age-related experiences.

#### Zimmerman's Integrative Theory of Prosocial Development

Recently, Zimmerman (1982) proposed a theory which synthesizes elements of social learning and developmental stage theories. This model was created to guide the development of test items to assess Headstart children's prosocial functioning. Zimmerman's model synthesizes Bar Tal's categories into three major periods: (much like Kohlberg's major periods) :self- centered; socially-centered and internalized.

This model was designed with several theoretical considerations in mind. First, the model focused upon developmental changes in children's prosocial functioning. Second, the model attempted to relate the amount and quality of children's helping behavior to their affective states and their cognitive level of functioning. That is to say, children's prosocial functioning was divided into three psychological dimensions: a) their helping of others; b) their reasoning about helping situations, and c) their feelings or emotions about helping others. Table 1 presents the model developed by Zimmerman (1982).

Table 1

## A Model for Describing Children's Prosocial Development

---

Dimensions of Psychological Functioning

---

Developmental Stage	Cognition	Affect	Behavior
1. Self-centered	Hedonistic	Egocentric	Self serving
2. Socially-centered	Sociocentric	Perceptive of others' feelings	Socially cued helping
3. Internalized	Principled	Empathic	Self regulated helping

---

According to Zimmerman, prosocial functioning is divided into the three psychological dimensions of behavior, affect and cognition. One or more specific processes comprise each dimension. The prosocial cognitive dimension of children is derived from their children's prosocial judgments. Children's prosocial affect centers upon the construct of empathy and its developmental precursor: children's interpersonal perception of affect. The prosocial behavior of children is inferred from one or more specific classes of helping. Zimmerman (1982) has adapted and developed measures of these dimensions for use with Headstart Children.

Social learning and cognitive structural theorists vary in their assumptions regarding children's cognitive stages of functioning. Specifically, they differ concerning whether prosocial stages are discrete or continuous. Social learning theorists see development as a gradual and continuous process (Bandura, 1977; Rushton, 1982); whereas, cognitive structural theories see them as qualitatively distinctive and discontinuous.

Zimmerman has theorized that cognitively, stage one children are self-centered and display a lack of awareness of social conventions for helping others. In terms of their affective functioning, stage one children are egocentric i.e. they ignore feelings of other people. Their behavior is

characterized by the absence of helping responses. The basis for their actions evolves around their expectation of immediate, tangible outcomes.

Cognitively, stage two children are sociocentric and aware of the presence and expectations of others. In terms of their affective functioning, stage 2 children's awareness of the feelings of others is identified as an intermediate stage in prosocial affective development. In the second stage of Zimmerman's proposed model, children's prosocial behavior is assumed to be highly dependent on social cueing by others, especially adults (vide Bar Tal, 1982). Although sociocentric children are aware of adult criteria for prosocial functioning, they have not yet internalized them (Cialdini, Kenrick, and Baumann, 1982). The social conventions of the child's immediate reference group forms the basis from which the child reasons prosocially.

In the third stage, adolescents are theorized to have internalized principled reasoning and initiate prosocial behavior by themselves. Stage three functioning is described as internalized because of its self-regulated quality (Cialdini, et al, 1982: Eisenberg-Berg, 1982). Principled forms of reasoning are used by adolescents and adults, who can now employ abstract principles or universalist criteria (Bar Tal, 1982). In terms of their affective functioning,

stage three individuals are assumed to feel empathy (the emotions of others) when helping. Behaviorally, stage three adolescents and adults will help others without social pressure or expectation of reward. Bar Tal (1982) describes the prosocial behavior of this stage as self-regulated.

Estimates of the age of children's transition from stage one to two or from stage two to three are offered tentatively based upon the available evidence. Prosocial functioning during stage two should begin during the primary grades and stage three functioning should stabilize during adolescence (Bar Tal, Raviv and Leiser, 1980; Cialdini and Kenrick, 1976; Eisenberg-Berg and Hand, 1979).

In synthesizing existing stage formulations of prosocial functioning, Zimmerman (1982) collapsed Bar Tal's seven categories for the development of moral functioning into three major stages similar to those of Kohlberg's (1965) three major periods. Stage 1 (lower level reasoning which is hedonistic and characterized by self-centered egocentric behavior) categories 1, 2, 3 of Bar Tal's model; Stage 2 (normative level motives whereby children become aware of social cues), categories 4 and 5 of Bar Tal's model and finally, Stage 3 (the highest level of reasoning) categories 6 and 7 of Bar Tal's model.

## Research on Modeling Influences of Children's Prosocial Functioning

Although modeling has been shown to affect the behavior of individuals, previous researchers have not addressed age or stage as a factor. These modeling investigations have proven useful in explaining how social responses are learned, however, the results may have been more dramatic or compelling if age or stage had been included as a factor.

At the most general level of analysis, it has been theorized that children who observe a model who behaves generously, will become more generous themselves. If, on the other hand, the children have seen another individual behave selfishly, they will become more selfish themselves. In a number of studies support for these hypotheses has been reported, Bryan and Walbek, (1970a, 1970b); Grusec (1971, 1972); Grusec and Skubisky (1970); Hartup and Coates (1967); Rosenhan and White, (1967); and Rushton, (1976). These early studies did not, however, deal with the issue of individual differences in reactivity by observers particularly to specific features of modeling contexts. Furthermore, the important roles of various covert processes has not been investigated extensively by social learning researchers (Bandura, 1986) to date.

Rosenhan and White (1967) were the first experimenters

to show that children's donations were influenced by observation of a model. They also reported that rehearsal in the presence of a model improved adoption of the model's standard for donations. They theorized that their subjects valued the model's approval and that approval compensated for any material loss they incurred by donating.

Although it has been amply documented that children will imitate models who are altruistic, the role of other key social developmental variables is unclear. At times, modeling techniques have been combined with preaching and direct instructions. Grusec and Kruczynski (1980) have concluded that when stringent demands for socially acceptable behavior are made by a socializing agent and when such demands as these are accompanied by reasoning, greater internalization of altruism usually occurs. Furthermore, prosocial standards acquired through modeling are affected by both inconsistencies in the behavior of a model over time (Grusec, 1978) and by discrepancies between what models practice and what they preach (Bryan and Walbek, 1970).

Short exhortations have not been found to be effective in changing behavioral functioning (Bryan, 1975; Rushton, 1975). However, there is some evidence that extensive exhortations may be as effective as a model's example. Grusec, Saas-Kortsaak and Simutis (1978) have demonstrated that

extended preaching where the emphasis is placed upon the importance of charity and practicing charity was more effective than nonverbal modeling alone.

Contrary to the findings of Rosenhan and White (1967), Grusec and Skubisky (1970) have found that third and fifth grade children who observed the model donate, imitated that behavior even in the absence of the model. In this experiment one half of the children observed the model donate to poor children while the other half heard the adult describe donating to the poor. Children then were observed playing the game outside of the presence of an adult. It was found that all subjects who observed the model donating the marbles shared half of their marbles with poor children. There were no significant differences noted between the verbalized condition and control condition (subjects who were not exposed to any model). The authors concluded that these findings supported the hypothesis that observing a model's sharing is much more effective in producing imitation than mere description of that behavior. Furthermore, Bandura's assertion that observational learning can occur without providing reinforcements to the observer was supported: children donated without rehearsal in the absence of the model. These results were replicated in a followup study, (Grusec, 1972).

Other researchers have looked at the effect of inconsistency in modeling, and its influence upon the prosocial behavior of children. Experiments by Bryan and Walbek (1970a, 1970b) have examined the effects of modeling and preaching by models. In the study, consistent and inconsistent verbal and motoric behavior were provided in which the model preached either charity or greed and later practiced either charity or greed. They found that what the model actually performs has an effect upon the subsequent prosocial behavior of the child. Preaching failed to increase or decrease donation behavior to needy children. However, one interesting finding concerned the judgment of the model's attractiveness: the model who preached charity and later practiced it was liked the most.

Although verbalizing values may influence children's behavior, most investigators assert that behavioral example is the crucial determinant in children's learning of altruistic behavior (Bryan et al., 1971; Midlarsky and Bryan, 1967; 1972 and Rushton, 1976).

Rushton (1982) and Grusec (1980) reported evidence that socializing agents must do more than teach values; they must act in accordance with them in order to develop children's altruism. These studies indicated that verbalized values often do not provide the essential information as to why and

how to carry out prosocial acts. However, it has been shown that observing others behave in a prosocial manner will produce prosocial responses from children.

In this study, modeling was viewed as an important determinant of prosocial behavior. In addition, the literature reviewed thus far suggests that preachings and instructions yield inconsistent results. Research by Grusec and her colleagues indicated that a child's age may have been related to their responsiveness to verbal rationales. However, there remains the issue of the nature of the rationales. The differential effects of rationales involving social and principled rules have not been reported in the literature. In answer to these specific shortcomings, the present study focused on the effects of modeling and various rationales in relation to a child's developmental level.

#### Research on Prosocial Reasoning and Behavior

In a number of studies, Eisenberg-Berg and her students have investigated the prosocial moral reasoning of preschoolers and school aged children to moral dilemma stories (Eisenberg-Berg, 1979a, 1979b; Eisenberg-Berg & Hand, 1979; Eisenberg-Berg & Neal, 1981; Eisenberg-Berg & Roth, 1980; Mussen & Eisenberg-Berg, 1977). In Eisenberg's procedure three or four prosocial moral dilemmas are presented to children during individual interviews. In each

story dilemma, a conflict is depicted between the needs of one individual or group and those of another within a context in which the roles of authorities, laws, rules, punishment, and formal obligations are irrelevant.

There are some shortcomings to the data reported by Eisenberg. The correlations reported for the reasoning on the hypothetical stories and sharing in classroom or daycare centers were low and often inconsistent (-.30 to .46). However, it should be noted that these correlation measures were not collected in a common context. It is conceivable if reasoning and prosocial donations were assessed in a common setting, the correlations may be higher.

#### Summary

Like cognitive stage approaches, social learning theorists recognize the importance of developmental capabilities of the observer. Although social learning theorists (Bandura, 1986; Zimmerman, 1982) acknowledged the relationship between children's age and prosocial functioning, they have not studied it widely as a variable in social learning research to date.

According to social learning theorists, prosocial behavior is acquired through observation. The variable of children's age is assumed to be a rough index of their social learning history and to their interpretations of that

experience. From their point of view, children become more aware of social expectations with age and experience. These theorists have assumed developmental stages are at best arbitrary points of reference on a continuous developmental curve (vide Zimmerman & Whitehurst, 1979).

The present study examined the effects of modeling, rationales, and developmental level upon children's prosocial behavior. Since several researchers (Ascione & Sanok, 1982; Barton, Olszewski & Madsen, 1979) have reported that the presence of adults upon prosocial behavior of children may be influential in promoting prosocial behavior and since this presence should be important to 8-10 year old children, this factor was included in the present investigation. To date, efforts to study age-related changes in children's observational learning of helping responses have been hampered by the lack of a theoretical model which focuses on these issues. Zimmerman's (1982) recent development of a model of prosocial functioning now permits testing of hypotheses about the presence of stages, the degree of convergence of children's stage functioning in cognitive, affective, and behavioral domains as well as the degree to which stage related modeling experiences prove to be effective.

## Hypotheses

The purpose of this study was to examine the effects of rationales, modeling, and children's age on their prosocial behavior. Additionally, prosocial moral reasoning of the three age groups of children was examined to determine whether it was influenced by one or more variables. The following hypotheses were tested.

1. For children exposed to a model, children in the 8- to 10-year-old age group were expected to donate significantly more than children in the 4- to 6-year-old age group.

This hypothesis tested the relationship between modeling and children's developmental stage.

2. The experimenter presence/absence difference would be greater for the 8- to 10-year-old age children than for the 4- to 6-year old and 12- to 14- year-old age children.

This hypothesis deals with the 8- to 10-year-old age group whose prosocial behavior is characterized by socially cued helping. Although all age groups were expected to give more in the presence of the experimenter than in her absence, the intermediate age group would be the most affected.

3. Children in the 8- to 10-year-old age group who view the model were expected to donate more than those in the control group in the presence of the experimenter.

This hypothesis deals with the impact of social experience upon the 8- to 10-year-old (socially-centered children).

4. The 8- to 10-year-old children who hear a model give a sociocentric rationale were expected to donate more than those observing a silent model under the experimenter present condition.

This hypothesis deals with the influence of models who give social rules, upon prosocial behavior of 8- to 10-year-old children.

5. Twelve to 14-year-old children who observe a model who gives a principled rationale were expected to donate more than the 8- to 10-year-old children outside the presence of an experimenter.

This hypothesis deals with the positive influence of models who give principled rules upon 12- to 14-year-old children's prosocial behavior.

6. Eight to 10-year-old children were expected to display significantly more sociocentric reasoning after donation than 12- to 14-year-old children.

7. Twelve to 14-year-old children were expected to display significantly more principled reasoning after donation than younger children.

These latter two hypotheses deal with children who are believed to be in socially-centered or internalized stages.

## Chapter 2

### Research Methods

#### Subjects.

The sample was comprised of 120 boys and girls: 40 (20 boys and 20 girls) 4- to 6-year-olds; 40 8- to 10-year-olds and 40 12- to 14-year-olds. The children who were primarily white in ethnicity, lived in a middle class residential area. Twelve percent of the children included those of Black, Hispanic and Chinese origins.

#### Design.

A 3 x 4 x 2 factorial design was employed with 3 age groups, 4 social learning conditions; and 2 levels of the experimenter presence during the donation task (absent-present). The four social learning conditions in the study have been referred to as silent model, social rule model, principle rule model and control.

#### Description of the Videotape.

Four videotapes, each entitled "Going to the Store," were created of 3 minutes duration. The videotapes depicted two girls walking through a park, one of whom was designated as a model. In the background there were some joggers and a blind

man with a sign and a cane. The blind man stood across the street across from a library entrance and held a sign stating: "I am blind. Please help me. God bless you."

The episode began with the girls discussing how they could spend the money that one of them (the model) earned in tips from her new paper route. They sat for a brief time on a park bench and decided on ways to spend the model's earnings of \$2.00. After a discussion of the various items they could purchase with the money, the two girls resumed their walk. As the two girls turned a corner, they encountered the blind man. The girl with the money had to decide whether to donate. However, before she was able to decide, the girls were interrupted by their teacher who was leaving the library. A short verbal exchange from across the street took place between the girls and the teacher.

Subsequently, the teacher left the scene, and the model remained to make her decision about donating. In one videotape, the model gave money to the blind man without giving a rationale. In a second videotape, the model donated money and subsequently was asked "why?" by her friend. Depending on the treatment condition, the model gave either a social rule or principled rule. The social rule rationale involved the following statements by the model: "We should donate because my parents would expect me to. Besides

what would the teacher think of me?" The principled rule rationale involved the following statements by the model: "Where would these people be if we didn't help. It's our duty to help those who are less fortunate than us..." In the control videotape, the blind man was absent from the scene.

#### Procedure.

Permission slips were sent home to parents explaining the nature of the project. The project was described as a study designed to ascertain how children view various videotapes depicting two children.

The experimental treatments were administered during a single session. At the beginning of the session, each child was given twenty dimes for attending the session. Each child was allowed to examine the exchange rate of dimes for valuable items on a checklist. A listing of toys, games and other various objects of interest to each age group was shown to each subject and the experimenter assisted the younger children in identifying the items on the list they may have wanted.

Each child was randomly assigned to one of the treatment conditions. The experimental treatment conditions involved four videotapes: 1. Control; 2. Modeling only; 3. Modeling with a social rationale and 4. Modeling with a principled rationale. The random assignment of subjects of each age

group to the treatment conditions resulted in 5 subjects of each gender/age in each group.

Each child was told that they would view a short film made by children. After viewing the film, the child was asked several questions regarding the quality of the film, namely whether he or she liked the film and what transpired on the film. This procedure ensured what the child understood on the videotape. The experimenter then introduced the last task.

"We have one more part to this survey I am conducting. Before going on to this next part, I would like to ask your help on something else. I am collecting money for the starving Ethiopian children. Do you remember hearing about the USA for Africa concert that was given and all the stars who donated their time for free to raise money for the starving children?. Well, I am also involved in this project to help raise money. Here is the container I am using to collect each person's donation to the starving Ethiopian children. Here is a picture I show to all the children who are asked to donate some money they have earned for coming here today to see the videotapes. I will leave this container which is labelled "USA for Africa" here for you. If you decide to share some of your earnings today before we go on to the next part, please drop your money in this container."

For subjects assigned to the experimenter-absent condition, the experimenter continued with the following dialogue:

"I have to leave the room for a few minutes. Please make up your mind about donating some money while I am gone." The experimenter left the room and returned three minutes later. At that time she noted whether the subject donated. If the child donated, the experimenter asked:

"I see you decided to donate some of your earnings to the starving children. Why did you do that?"

Each answer was recorded and later reviewed. For subjects assigned to the experimenter-present condition, the experimenter simply waited with the child for three minutes after saying

"While I am setting up for the next part of this survey, please make up your mind about donating money."

The experimenter appeared busy preparing for the next part of the study and noted whether the child donated during a three minute period. If the child donated, he/she was asked to explain. Again the responses they gave to this question were recorded and later reviewed.

For subjects assigned to the experimenter-present condition, the experimenter simply waited with the child for

three minutes. Children who failed to donate were not asked why they did not donate. Results of a pilot study did not reveal any useful information in their answers if the children offered any. Unexpectedly, 15 subjects picked up the container and shook it to see how much money was in it. A small amount of money was put in it to make the task sound credible when the coins dropped. Since shaking provided information about donations of absent models, it constituted an implied modeling procedure. As a result, these 15 subjects were eliminated and were replaced by 15 additional subjects.

The final phase of the experiment included the administration of the Eisenberg Prosocial Moral Reasoning Scale. Derived from Kohlberg's theory and his story dilemma methodology, Eisenberg's Scale was used to examine the level of prosocial moral reasoning of children. This scale was administered individually to each child after exposure to the videotape and donation task. This sequence was adopted to prevent the subjects from becoming sensitized to the purpose of the study. The stories were presented as follows: Each story was read to the child and pictures were presented to illustrate the story's content. The experimenter elaborated upon the story whenever necessary. The sex of the characters in the stories was matched with the sex of the subject.

Thus, girls heard stories about girls and boys heard stories about boys. The responses of the children were tape recorded and transcribed later. The entire session lasted between 35 and 40 minutes.

Eisenberg's scoring procedure was followed. Each child was assigned scores indicating the frequency with which he or she used each of the various types of reasoning identified by Eisenberg. A five point scale (0= no use of a particular type of reasoning; 4= use of the given type of reasoning in four stories) was used. Each child was assigned a score between 1 and 4 for hedonism, punishment and authority orientation, needs oriented, pragmatic, stereotypic, approval oriented and mutual benefit orientation reasoning. The responses to the Eisenberg stories were scored by two independent raters. Interrater reliability yielded a correlation of .91.

Eisenberg-Berg's scale was selected because the various types of reasoning it measures can be related to the three stages of development outlined by Zimmerman (1982). In stage one, children's reasoning is characterized by hedonism. This stage reflects a child's desire for personal gain and lack of concern for the feelings of others. This stage is similar to Eisenberg's category of "hedonism." Zimmerman's second stage of reasoning is characterized by a child's concern for the

approval of others. This stage is similar to the category of reasoning Eisenberg lists as "approval oriented" reasoning. In Zimmerman's third stage, principled reasoning is characterized by a child's concern for the condition of people as a whole or duty to mankind. This stage is similar to the "mutual benefit orientation" category of Eisenberg. Eisenberg's Scale was used to test whether the three age groups of children did in fact display qualitatively different levels of prosocial reasoning.

Upon completion of the study, each child was individually debriefed regarding the nature of the study. Children were given an opportunity for their questions to be answered.

## Chapter 3

### Results

#### Age Group Analyses

In order to establish that the three age groups of children were representative of Zimmerman's three stage levels, a MANOVA was performed on the 3 reasoning responses (reasoning categories: hedonistic, approval oriented, and mutual benefit orientation) identified by Eisenberg to her hypothetical stories that were relevant to Zimmerman's model. The means and standard deviations from this analysis are reported in Table 2 . The Wilks Lambda test revealed a significant effect for age groups,  $F(12, 224) = 14.40$ ,  $p < .01$ . For all three categories of reasoning, significant univariate effects were found: Approval,  $F(2, 117) = 6.53$ ,  $p < .02$ ; Hedonism,  $F(2, 117) = 10.46$ ,  $p < .001$ ; Mutual Benefit Orientation,  $F(2, 117) = 50.89$ ,  $p < .001$ .

Comparisons among the three age groups revealed significant results for each category of reasoning. The t-tests performed on the data indicated that the 4- to 6-year-old children gave more hedonistic responses,  $t(78) = 2.72$ ,  $p < .01$ ), than the 8- to 10-year-old children,  $t(78) = 3.91$ ,  $p < .01$  and the 12- to 14-year-old children,  $t(78) = 2.14$ ,  $p < .04$ . The t-tests indicated that the 8- to

10-year-old children displayed greater amount of approval reasoning than the 4- to 6-year-old children  $t(78) = 2.33$ ,  $p < .03$  and the 12- to 14-year-old children,  $t(78) = 2.64$ ,  $p < .01$ . The t-tests also indicated that the 12- to 14-year-old children displayed greater mutual benefit orientation reasoning than the 8- to 10-year-old group,  $t(78) = 7.02$ ,  $p < .01$  and the 4- to 6-year-old children,  $t(78) = 7.33$ ,  $p < .01$ .

TABLE 2

Mean and Standard Deviations for Each Category of  
Children's Reasoning on Hypothetical Stories

Age Group	Types of Reasoning		
	Hedonism	Approval Oriented	Mutual Benefit Orientation
4-to 5-years old			
<u>M</u>	1.30	.13	.00
<u>SD</u>	1.65	.40	.00
8-to 10-years old			
<u>M</u>	.18	.45	.10
<u>SD</u>	.38	.78	.22
12-to 14-years old			
<u>M</u>	.45	.10	1.70
<u>SD</u>	.71	.30	1.42

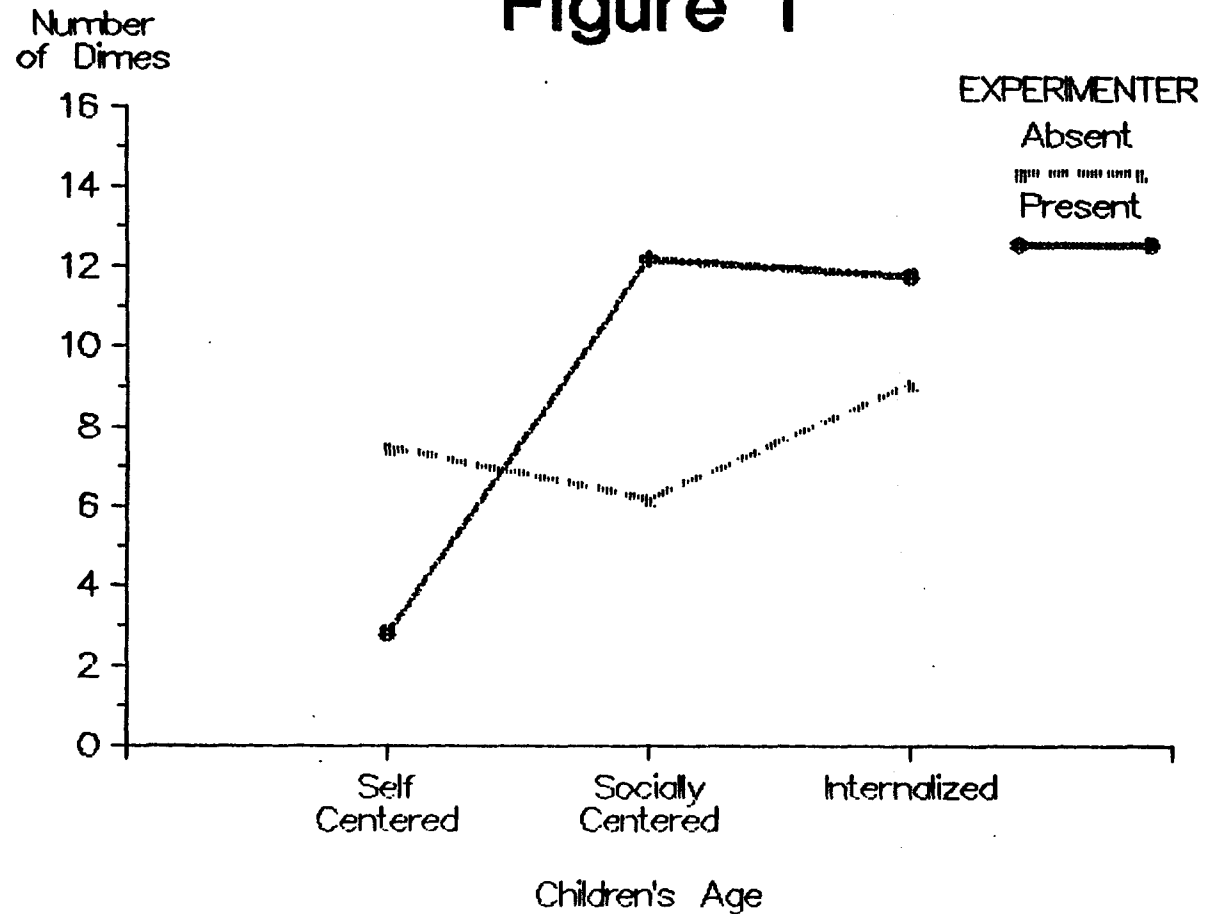
### Hypotheses and Research Findings

Hypotheses 1 through 6 examined children's donation using t-tests and analysis of variance procedures.

Hypothesis 1 predicted that the 8- to 10-year-old children who were exposed to the model would make greater donations than the 4- to 6-year-old children regardless of the presence or absence of the experimenter. The t-tests performed on the data confirmed this hypothesis,  $t(58) = 4.18, p < .001$ .

Hypothesis 2 predicted that the presence (versus the absence) of the experimenter would elicit greater differences in donation by children in the 8- to 10-year-old group than by the 4- to 6-year-old or 12- to 14-year-old children. A 2 experimenter presence (presence/absence) by 3 age groups analysis of variance was conducted on the money donated during the study. A main effect was found for age,  $F(1,84) = 13.51, p < .01$ . The interaction between experimenter presence and the child's age was significant,  $F(1,84) = 4.29, p < .03$  (see Figure 1). For each age group of children, a t-test was performed on the data from those exposed to the experimenter versus those who were not. These data are presented in Table 3. Although the presence of the experimenter increased donation for the two older age groups, the effect was significant for only 8- to 10-year-olds,  $t(38) = 3.86, p < .001$ ; 12- to 14-year-olds,  $t(38) = 1.76, p < .087$ ; 4- to 6-year-olds,  $t(38) = -.54, p > .05$ . The experimenter's

# Figure 1



The Interaction of Children's Age and Experimenter Presence on their Donation Means

TABLE 3

Mean Dimes Donated in the Presence  
and Absence of the Experimenter

---

Experimenter Presence

---

Children's Age Group	Present	Absent
4- to 6-years	2.40	5.40
8- to 10-years	12.15	6.15
12- to 14-years	11.95	9.20

---

presence was significant with only the 8- to 10-year-old group of children.

Hypothesis 3 predicted that in the presence of the experimenter, 8- to 10-year-old children who were exposed to a model ( $M = 13.00$ ; the silent model, modeling with social rule and modeling with principle rule combined) would donate more than their no model counterparts ( $M = 6.80$ ). The t-tests performed on the data confirmed this hypothesis,  $t(18) = 2.54, p < .02$ .

Regarding hypothesis 4, 8- to 10-year-old children exposed to a model giving a social rule ( $M = 14.80$ ) were predicted to donate more than the 8- to 10-year-old children exposed to a silent model ( $M = 11.40$ ) in the presence of the experimenter. The t-tests performed on the data indicated that this difference, although in the predicted direction, did not reach statistical significance,  $t(8) = 1.17, p = .14$ . Therefore, hypothesis 4 was not supported.

Hypothesis 5 predicted significant differences between the 8- to 10-year-old and 12- to 14-year-old groups exposed to a model giving principled rules. In the absence of the experimenter, 12- to 14-year-old children were predicted to make significantly greater donations than the 8- to 10-year-old youngsters. The means of the 8- to 10-year-old children ( $M = 7.60$ ) and 12- to 14-year-old ( $M = 7.40$ ) did not differ significantly,  $t(8) = .05, p > .05$ . Therefore the data

did not confirm hypothesis 5.

Hypotheses 6 and 7 were tested using a chi square analyses of reasoning by students from the three age groups. Table 4 outlines frequencies which included three types of reasoning responses made after donation by children in each of the stages (no rule or response, social or principle rule). As predicted, a significant relationship was found between age level and type of reasoning given after donation, ( $\chi^2(4) = 45.28, p < .001$ ).

In order to determine what specific cells account for the significant relationship between age level and type of reasoning, this 3 x 3 table was partitioned (Reynolds, 1977) into four 2 x 2 tables (see Table 5). The 2 x 2 contrasts that are outlined in Table 5 (contrast II through V) permit a thorough examination of the differences in variability among the cells. Of the four 2 x 2 contrasts illustrated, two were chosen as tests for hypotheses 6 and 7. Each 2 x 2 table tests one hypothesis and uses one degree of freedom. Small values relative to the degrees of freedom indicate independence, while large values indicate that rows and columns are related.

With regard to hypothesis 6, contrast II in Table 5 shows that 4- to 6-year olds differed from the 8- to 10-year olds in giving more no responses and fewer social rule answers, ( $\chi^2(1) = 6.35, p < .02$ ). To test hypothesis 7,

TABLE 4

## Frequencies of Rules given after Donation

---

Type of Rules	Children's Age Group		
	4-6	8-10	12-14
No Response	13	4	4
Social Rule	26	35	17
Principle Rule	0	1	17

---

contrast V in Table 5 shows that 12- to 14-year olds differed from younger children in their greater use of principle rules after donation compared to younger children's use of social rules or no rules, ( $\chi^2(1) = 37.48, p < .01$ ). Analysis for the two remaining two-way contrasts proved nonsignificant. These comparisons are demonstrated in contrast III in Table 5 where the two younger age groups were compared for their use of no rule and social rule versus principle rule use, ( $\chi^2(1) = 1.37, p < .24$ ). In contrast IV the no rule and social rule responses for both younger groups were compared to the oldest group, ( $\chi^2(1) = .08, p < .78$ ).

One limitation of this analysis is that some children in each age group were exposed to certain modeled rationales. The number and type of rationales were distributed equally across the age groups, and thus could not explain age group differences in reasoning. However, it is important to see if modeled rationales did affect the children's post donation explanation. To test this hypothesis the data were converted from nominal to metric form to enable analyses despite zero cell frequencies. No response was coded as 3, a social rule as 1 and a principle rule as 2.

A 3 age groups (4-6, 8-10, 12-14-year-olds) by 4 conditions (silent model, social rule, principle rule and control) analysis of variance was performed on the number of rule responses (no response, social and principle) given after donation. A significant main effect was found for age,

**Table 5**  
**Partitioning Results of the Chi Square**

I Type of Rule		4-6 8-10 12-14		
		1	2	3
No rule	N	13	4	4
Social rule	S	26	35	17
Principle rule	P	0	1	17

$$\chi^2 (4) = 45.28, p < .001$$

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P		1	17																														

$F(2, 108) = 3.04, p < .05$ , but not for type of treatment,  $F(3, 108) = .33, p < .80$ . The interaction between age and treatment was not significant,  $F(6, 108) = 1.66, p < .13$ . Thus, it is clear that children did not adopt a particular type of reasoning based on their exposure to a model's explanation. Instead, it appeared that their age group was the decisive factor. Together, these data indicate that each of the selected age groups reasoned in accordance with Zimmerman's stage predictions regardless of their exposure to a model's rationales.

#### Summary Analyses

To provide an overall summary of the data, a 3 age groups by 4 conditions (silent, social, and principle rule model and control) by 2 (presence/absence of the experimenter) analysis of variance was conducted using money donated during the study as the dependent variable. The means and standard deviations from this analysis are reported in Table 6. A main effect was found for children's age,  $F(2, 96) = 11.62, p < .0001$  (see Table 7) and the presence (versus absence) of the experimenter,  $F(1, 96) = 8.24, p < .005$ . An effect was found for the interaction between the presence/absence of the experimenter variable and children's age,  $F(2, 96) = 3.77, p < .03$ . Figure 1 reveals that the interaction reflects the absence of an experimenter effect for 4- to 6-year-old children, a large effect for 8- to

TABLE 6

Dimes Donated by Children of varying ages who were exposed  
to Modeling and Experimenter Presence Conditions

Modeling Conditions					
Children's Age and Experimenter Influence		Social Principle			
		Silent	Rule	Rule	Control
4-6 years old					
Present	M	4.00	5.60	3.20	5.80
	S.D.	2.45	8.30	1.92	6.14
Absent	M	5.80	4.40	5.80	5.60
	S.D.	2.80	4.61	3.80	3.64
8-10 years old					
Present	M	11.40	14.80	12.80	6.80
	S.D.	5.41	3.60	6.50	3.11
Absent	M	6.20	6.40	7.60	4.40
	S.D.	3.63	2.20	2.60	3.40
12-14 years old					
Present	M	12.60	14.00	13.00	8.20
	S.D.	5.98	4.24	9.80	2.50
Absent	M	10.80	10.00	7.40	6.20
	S.D.	5.80	6.70	7.90	2.70

Note n = 5 per cell.

**TABLE 7**

**Analysis of Variance for the Effects of Rationales, Modeling  
and Developmental Stage on Children's Donation Behavior**

---

Statistical Outcome

---

Source	df	F	Significance
Presence	1,96	8.24	p<.005
Group	2,96	11.616	p<.001
Condition	3,96	2.021	p<.116
Presence by Group	2,96	3.777	p<.026
Presence by Condition	3,96	.558	p<.644
Presence by Grp by Condition	6,96	.331	p<.919
Groups by Condition	6,96	1.012	p<.422

---

Note. The total number of subjects is 120.

10-year-old children and a smaller effect for 12- to 14-year-old children. Earlier analyses of these data in Table 3 revealed that experimenter presence only affected the donation of the 8- to 10-year-olds significantly ( $p < .001$ ).

The Relationship between Reasoning after Donation and the Amount of Dimes Donated

A 3 type of rules (no rule, social and principle rules) by 4 modeling conditions (silent model, social rule and principle rule models, control) analysis of variance was performed using the children's donations as the dependent measure. A significant main effect was found for type of rule given after donation,  $F(2, 105) = 6.08, p < .003$ . There were no significant differences found for type of condition to which subjects were exposed,  $F(3, 105) = 1.63, p < .186$ . The interaction between type of rule and treatment condition did not prove significant,  $F(6, 105) = 1.51, p < .18$ .

Thus, although the effects of modeling were nonsignificant in this study, a relationship between stage of reasoning and amount of donation was found (Table 8). Post hoc testing for social versus principle rule giving after donation yielded the following significant results:  $t(23) = 2.20, p < .04$  in the silent model condition;  $t(22) = 2.33, p < .03$  in the principle model condition. Therefore, children giving principle rules after donation also donated the most.

TABLE 8

Dimes donated by Children who gave Social, Principle  
or No Response under varying Treatment Conditions

Type of Rules		Modeling Conditions			
		Silent	Social	Principle	Control
Social Rule	M	7.57	10.24	7.90	5.65
	SD	4.33	6.67	6.10	3.04
	n=	21	17	20	20
Principle	M	13.50	11.13	16.67	8.33
	SD	7.89	4.90	5.80	2.90
	n=	4	8	3	3
No Response	M	8.20	3.25	8.20	6.71
	SD	5.84	2.75	6.22	5.30
	n=	5	4	5	7

## Chapter 4

### Discussion

The present study was the first attempt made to empirically test Zimmerman's model for describing children's prosocial development. In general, the results provided support for his view that a predictable three stage developmental pattern occurs in children's prosocial functioning. Age-correlated changes were observed in both reasoning and helping. As specified by the theory, the presence of qualitative different types of reasoning and helping were noted within the three age groups studied.

There are three sources of data that support Zimmerman's model. These data will be discussed in three sections that refer to children's reasoning on the hypothetical stories; the interrelationship between their age, the social setting and their donation, and finally the relationship between their age and reasoning after donation.

#### Reasoning on the Hypothetical Stories

With regard to children's reasoning concerning the hypothetical stories, 4- to 6-year-old children were primarily hedonistic, whereas 8- to 10-year-olds were approval oriented and 12- to 14-year-olds were concerned with mutual benefit. These results supported Zimmerman's view that children's prosocial cognitive judgments proceeded from

self-centered to internalized in three distinguishable stages. Thus, the results provided support for one of the underlying theoretical assumptions upon which the model was based: that the level of children's prosocial cognitive functioning was related to their age.

The Relationship between Children's Age, the Social Setting, and their Donation

The data discussed in this section dealt with three age groups in children's prosocial behavioral functioning in response to specific environmental events. These events, which included exposure to models donation, models' rationale, and to an experimenter during donation, will be discussed under separate subheadings.

The Effect of Modeling. Hypothesis 1 predicted 8- to 10-year-old children exposed to a model would make greater donations than 4- to 6-year-old youngsters. This hypothesis was supported. The mean number of donations was greater for 8- to 10-year-olds than for 4- to 6-year-olds.

Eight to 10-year-old children donated more than their control group counterparts when exposed to modeling and/rationale techniques (Hypothesis 3). No differences were found among the 4- to 6-year-old children. Thus, the impact of this modeling experience upon their donation levels was

found to be significant for only the two higher stage groups. These results indicate further support for Zimmerman's prediction that the 8- to 10-year-old child's behavior is characterized by socially cued helping. However, the data showed that this effect was evident also for 12- to 14-year-olds. This result is concordant with the social learning assumption that childrens' prosocial stages represent continuous, not discrete developmental transitions. It appears that the older children remain sensitive to social influences - a point often made by social learning theorists (e.g., Liebert, 1979). Internalization does not mean imperviousness of adults to social influences; rather it represents the ability of the adolescent to remember prior social learning and apply it without direct social pressure (Rosenthal and Zimmerman, 1978).

In addition, children in the 8- to 10-year-old group (socially-centered) gave greater donations after exposure to a model who gave a social rule than to a silent model. However, this predicted difference (Hypothesis 4) did not reach statistical significance. The model's provision of a principled rationale did not improve 12- to 14-year-old youngsters' donation in the absence of the experimenter as predicted (Hypothesis 5). Thus, it appeared that the provision of a rationale by the model did relatively little

to increase the impact of a model's donation. However, it is possible that the children may have inferred the model's underlying rationale without need for verbal elaboration. It is also possible that social rules may facilitate internalization to some degree. Knowing that other people regard uncharitable behavior negatively may be enough to increase donation outside the presence of others. There are no guarantees that others may not observe or hear about one's selfish conduct in most naturalistic settings. This view of children's internalization of social codes as being affected by potential aversive consequences has received some support in social learning research (Zimmerman and Kinsler, 1979).

It had been predicted (Hypothesis 4) that 8- to 10-year-old children would make greater donations when exposed to a model giving a social rule than their counterparts who were exposed to a silent model in the presence of the experimenter. Although they did make greater donations in the model with social rule condition, these mean differences were not significant. Further study of this issue with a larger number of subjects should be considered in future research.

The Effect of Experimenter Presence. Concerning the effect of the presence of the experimenter, it had been predicted that this experience would greatly impact 8- to

10-year-old children. Hypothesis 2 tested Zimmerman's claim that children's prosocial behavior is highly dependent on social cueing by others, especially adults. The results confirmed that 8- to 10-year-old children were more affected by the presence or absence of the experimenter than 4- to 6-year-old or 12- to 14-year olds.

No difference was obtained for the 12- to 14-year-old children who donated equally when the experimenter was present as when absent (Hypothesis 5). Furthermore, the results for amount of donation are significant for the 12- to 14-year-old children whose mean amount of donation was greater than the mean amount for 8- to 10-year-old children in the absence of the experimenter but in the presence of the experimenter the 8- to 10-year-olds donated as much as the 12- to 14-year-olds. These findings support the theoretical assumption that internalization typically occurs during early adolescence. In addition, there was evidence that suggests that the type of treatment was not an important factor for the oldest age group. The modeling conditions did not significantly increase the size of the donation made by the 12- to 14-year-old children. These results were also consistent with an internalization hypothesis.

#### The Relationship between Children's Age and Reasoning after Donation

A significant relationship between the children's age

level and their type of reasoning after donating was found for the 8- to 10-year-old and 12- to 14-year-old children. Chi square analyses revealed that social rule responses were primarily found within the repertoire of the 8- to 10-year-old child but not the 4- to 6-year-old child. Furthermore, it was found that the 12- to 14-year-old children differed from younger children in their provision of principle rules where as the two younger age groups gave either no response or a social rule. These data indicate some support for Zimmerman's model in that sociocentric reasoning was characteristic of the 8- to 10-year-old child while principled reasoning was characteristic of the 12- to 14-year-old child. The data also revealed that this developmental transition between stages 2 and 3 was not complete. It is possible that principled reasoning may not emerge fully until after age 12- to 14-years or perhaps not all children are able to achieve this level of prosocial functioning. Future research should include older adolescents in order to resolve this question.

The analysis of variance performed on the donation data by those 8- to 10-year-old and 12- to 14-year-old children who gave social rule responses after donation indicated that 12- to 14-year-old children who gave social rule responses made greater donations than the 8- to 10-year-old or 4- to

6-year-old youngsters. Among children who gave a principle rule after donation, only the 12- to 14-year-old children made significantly greater donations. Apparently, giving a principle rule did not insure optimal donation. However, it should be noted that 8- to 10-year-old children only gave principle rule responses under one modeling condition and their donations were far less than those made by the 12- to 14-year-old children in any one of the four conditions including control. Therefore, principle rule giving was not fully internalized but was socially instigated with 8- to 10-year-olds.

In general, the children's reasoning after donation was concordant with predictions derived from Zimmerman's model of prosocial development. The use of a social rule was clearly found within the repertoire of the 8- to 10-year-old children while principle rule use was most characteristic of the 12- to 14-year-old age group. These post-donation results were consistent independent measures of children's reasoning derived from the Eisenberg Prosocial Reasoning Scale. That is, 8- to 10-year-olds were noted to use approval-oriented reasoning while 12- to 14-year-olds used mutual benefit orientation reasoning categories outlined by Eisenberg.

### Conclusions

Although it has been previously established that social

models can affect donation behavior of children, the present data indicate these effects are more complicated than initially envisioned. This complexity can be explained to a significant degree by taking into account a child's stage of prosocial development. Children reason and respond to social situations differently depending on their stage of functioning. Moral judgments according to social learning theorists are often made on the basis of cognitive rules. Internalization occurs when children can abstract appropriate rules of behavior and can understand their interpersonal value in other social contexts. Internalization depends therefore on cognitive maturation and exposure to specific types of social experience. According to social learning theorists, children as well as adults, form concepts by observing models repeatedly acting upon their environment and by discriminating and understanding common features of those interactions.

Young children possess limited language skills. The use of social learning techniques that are less verbally oriented such as modeling, imitation and guided behavioral rehearsal may lead and assist young children to understand the value of prosocial behavior. These methods of instruction have been widely studied in prior research (Rosenthal and Zimmerman, 1978). However, the effects of different types of verbal

rationales on prosocial functioning of children as young as 4 years have not been amply studied.

In prior research, short exhortations, in this case, the use of social rules, were not an effective tool in increasing donation responses (Bryan, 1975; Rushton, 1975). However, when specific emphasis was placed upon the importance of charity, a principal type of rule, verbal exhortations were found to be more effective than modeling alone (Grusec, Saas-Kortsaak and Simutis, 1978). In the present study, the effects of a model's rationales were not found to be significant. However, the results of the social rule condition indicated that children tended to make greater donations when they observed and heard a model who gave a prosocial rationale.

With increased age children became more generous after exposure to models who provided some sort of rationale for their action. Whether the rationale was classified as social or principled did not appear to make an appreciable difference on older children's donations. However, the 12- to 14-year-old children clearly offered principled rules more frequently than the 8- to 10-year-old children.

Unlike most other developmental studies of children's prosocial functioning, the present study sought to measure the prosocial behavior as well as their reasoning in real

world situations. Zimmerman's model provided a way that these two dimensions of prosocial functioning can be interrelated, and the present results suggests that it is indeed a fruitful one.

To briefly summarize, Zimmerman's (1982) three stage model of children's prosocial development was supported in the following ways. Four to 6-year-old children displayed the least amount of donating behavior regardless of exposure to modeling techniques and when they did, they had greater trouble explaining it using a social rule. This evidence supports Zimmerman's claim that 4- to 6-year-old children expect immediate, tangible outcomes and their actions are self-serving. There was also data to support the assumption that 8- to 10-year-old children are perceptive of the feelings of others: the presence of adults was more highly influential in increasing the amount of donations by 8- to 10-year-old children than 4- to 6-year-old or 12- to 14-year-old youngsters. In addition, exposure to a model strongly affected 8- to 10-year-olds donation more than 4- to 6-year-olds.

Finally, 12- to 14-year old adolescents were found to make statistically comparable donations inside and outside the presence of the experimenter and in addition, they used

principled rules to justify their actions. Therefore, the prosocial behavior of children at this age can be described as having become internalized as was theorized by Zimmerman. Thus, although a model's type of rationale did not produce strong effects as theorized, there was considerable support for Zimmerman's (1982) three stage model of children's prosocial functioning.

One shortcoming to this study concerns the number of subjects per cell. Further research is needed to examine the effects of modeling and rationales upon prosocial behavior with a larger number of subjects per cell.

As the first test of Zimmerman's model, the present study sought to provide support for the broad features of the model. This decision limited the statistical power of cell by cell comparisons in favor of overall main effects and interactions. The sample was, however, large and adequate for the purpose that was adopted. Now that support for the broad conditions of the model were provided, future researchers are able to focus greater attention on specific cell by cell comparisons. In addition, further research is needed on the role of affective variables in children prosocial cognitive or behavioral functioning.

### Implications for Education

The present study provided support for the notion that children can learn a wide variety of prosocial behavior from peer models who are presented by videotape. Teachers and counselors need not be passive about promoting children prosocial development. Although further research is clearly necessary on the limits and size of training effects, clearly prosocial behavior is responsive to systematic training using models.

Zimmerman's model can also be useful for teachers in their daily encounters with behavioral problems of students in the classroom. The model provides information concerning the cognitive, behavioral and affective functioning of children in terms of their age level. Teachers who are aware of these specific psychological dimensions of their pupils can not only understand but assist children with their prosocial functioning. The fact that children's reasoning moves from a hedonistic to a socially-centered and then to principled forms directs teachers toward using rationales that are at their present level of reasoning.

The development of prosocial behaviors by children is of significant interest to educators. To date, research in this area has focused primarily upon antisocial behavior. The

present investigation has provided educators and psychologists with information about the types of social experiences that can elicit prosocial behavior in children of differing ages. Such outcomes would enable curriculum planners to devise instruction modules to promote prosocial development for children in general. Furthermore, if specific children displaying antisocial or low levels of prosocial behavior in school can be identified, they can be given focused training using videotapes to improve their particular deficiency in prosocial functioning.

**Appendix**

### Moral Judgment Categories

Eisenberg-Berg and Hand (1979) have written moral judgment stories to assess prosocial moral reasoning. Each story contains a prosocial moral dilemma in which the needs of the protagonist are in conflict with the needs of another person. This conflict usually emerges in a setting where little emphasis is placed upon authority, punishment, formal obligations, explicit rules and laws. The story is accompanied by an illustration depicting pertinent scenes in the stories. Difficult concepts were explained to the children. The stories for the younger children include "The Floor," "The Accident," "Swimming Story," and "Ann's Story". The stories for older subjects include: "Anne's Story," "The Flood," "Swimming Story," and "Robbery Story." General and specific procedures for administration of the Eisenberg prosocial moral dilemmas were followed by the experimenter. The experimenter coded the moral judgment stories. The type of reasoning outlined by Eisenberg was coded for each story for all subjects. The categories are defined below.

Authority and Punishment Reasoning. Avoidance of punishment is valued. The individual feels that punishment and the physical consequences of an action determine its

goodness in spite of human needs and values. Eisenberg's example is one in which the child who had been instructed not to leave the yard, would not leave her sandbox to help another child (in the bully story).

Hedonism. The child is self centered and concerned about selfish gains for himself. An example of this reasoning is the child who would not help the child who is injured because he has to attend the birthday party for the "cake" or "he likes games" (which are at the party).

Needs Oriented. The needs of others, whether physical or psychological, are considered in the child's reasoning, for example, a child said Sue would assist the children who were crippled because "their legs hurt."

Pragmatic Reasoning. Nonmoral, practical considerations that are not associated with the needs of another are reasons given by the child who considers specific actions. For example, in story 3 the crippled children would be taught to swim, because according to the child "He knows how to do it" or because "He's a good teacher."

Stereotypic Reasoning. Stereotypic understanding of good and bad behavior is given as reasons for the child's actions; for example, "Cuz, that's more nice (to help)."

Approval Oriented Reasoning. In justifying a specific course of action, the child considers the approval and

acceptance of others; for example, in the story about a bully the child said he would help because "he might make friends with the boy (being punished)".

Mutual Benefit Orientation. The child's reasoning evolves around the end result of gain for all interested parties, the child said the character should share a little food because "then they'd have some food."

**Eisenberg's Stories for Younger Children:**

**The Flood.** A poor farming village named Highlands grew just enough food to feed the village people with no extra food left over. Just at that time, a nearby town named lowlands was flooded and all the town's food was ruined leaving them nothing to eat. People in the flooded town of Lowlands asked the poor farmers of Highlands to give them some food. If the farmers in Highlands did give the food to the people of Lowlands, the farmer would go hungry after working so hard at growing their food. They would not die but would be very hungry and in pain. Their tummies would hurt.

**Swimming Story.** Bob was a young man who was very good at swimming. He was asked to help young crippled children, who could not walk, learn to swim so that they could make their legs strong for walking. Bob was the only one in town who could do the job because he was a good swimmer and a teacher. But helping the crippled children would take much of Bob's free time left after work and Bob wanted to practice swimming very hard for an important swimming contest coming up. If Bob could not practice swimming in all his free time, he would probably lose the swimming contest and not receive the prize for winning which was money.

The Accident. One day a boy named Eric was going to a friend's birthday party. On his way he saw a boy who had fallen down and hurt his leg. The boy asked Eric to go to his house and get his parents so the parents could come and take him to a doctor. But if Eric did run and get the child's parents, he would be late to the birthday party and miss the ice cream, cake and all the games.

John's Story. One day while John was playing in his yard, he saw a bully push and tease another child whom he did not know. There weren't any grownups around. As John watched, the one boy kept pushing the other boy down every time he tried to get back up. John was having a good time playing in his yard, and the bully might pick on him too if he tried to help.

Eisenberg's Stories for Older Children:

The Flood. A poor farming village named Circleville had a harvest that was just enough to feed the villagers with no extra food left over. Just at that time a nearby town named Larksdale was flooded and all the town's food was ruined so that they had nothing to eat. People in this flooded town of Larksdale asked the poor farmers of Circleville to give them

some food. If the farmers did give the food to the people of Larksdale, they would go hungry after working so hard all summer for their crops. It would take too long to bring in food from other villages further away because the roads were bad and they had no airplanes.

Swimming Story. Sue, a young woman who was very good at swimming, was asked to help young crippled children who could not walk to learn to swim so that they could strengthen their legs for walking. Sue was the only one in her town who could do this job well because only she had had both life-saving and teaching experiences. But helping the crippled children would take much of Sue's free time left after work and school, and Sue had wanted to practice very hard as often as possible for a series of very important swimming contests coming up. If Sue did not practice swimming in all her free time, her chances of winning the contests, and also for receiving a paid college education or a sum of money, would be greatly lessened.

Anne's Story. A young woman named Anne had a very rare type of blood. One day right after Anne had begun college and a new job, a doctor called Anne up to ask her to give a large amount of blood to someone who was very ill and needed more

blood of the same kind as her own to get well. Because Anne was the only person in the town with the sick man's type of blood, and since this was an unusual serious illness, the blood would have to be given a number of times over a period of several weeks. So, if Anne agreed to give her blood, she would have to go into the hospital for several weeks. This hospitalization would make Anne feel weak for a while, she would lose her new job, and she would be very far behind in school.

Robbery Story. Mr. Brown was walking home from his office alone at night when he saw an apparently unarmed man attempting to take a woman's purse. The woman was holding on to the purse and crying for help while she and the man struggled over the purse. Few, if any, other people were in the area of the robbery. Mr. Brown was far enough away that he could himself escape without the robber noticing him.

Videotape Dialogue

Videotape 1: Modeling and Social Rule

Videotape 2: Modeling and Principle Rule

Videotape 3: Silent Model

Videotape 4: No Model

Setting: Neighborhood surrounding with a library across the way. Two girls are walking along the way, their verbal discourse includes how the weather is, discussion about a recent movie, etc. The two girls Jamie and Stacy notice a blind man as they turn the corner. About the same time, their teacher is leaving the library. The blind man who is across the way from the library, is jingling the change in his cup and the sign he is holding up says: "I am blind. Please help me. God bless you." Jamie turns to Stacy and inquiries about the money that Stacy is jingling in her hand.

Jamie: Where did you get that money?

Stacy: I just earned \$2.00 in tips from my new paper route. Let's spend it.

Jamie: Well, what do you think \$2.00 will buy?

Stacy: Well, its not enough to see a movie, but we could buy some new stickers or a new magazine.

Jamie: If my brother had the money he might buy a transformer. But how about some candy instead?

Stacy: Mm, candy.

Jamie: Or a Chinese jumprope?

Stacy: Let's go to the store and see what we can buy.

The two girls had paused and the dialogue above took place as they were seated on a park bench. Then, they resume their walk.

Jamie: Look (reading the sign outloud). "I am blind. Please help me. God bless you." Gee, I don't have any money.

Stacy: Well, I have this money I was planning to use at the store...

The girls are interrupted by their teacher, Mrs. Fischer, who is walking out of the library. she is across the street and greets the girls from a distance.

Mrs. Fischer: Hello, Jamie, oh and Stacy. Going to the library?

Jamie and Stacy: No, not today.

Mrs. Fischer: Oh, I've been - I found some wonderful books for social studies lessons for next week's class.

Stacy: Great!

Teacher: Well, I'll be going now. See you next week girls.

Stacy and Jamie: Bye, Mrs. Fischer.

Teacher walks away into the distance. Stacy is then left to make a decison about donating the money to the blind man.

Stacy then decides after a slight pause, to drop several coins into the cup.

Jamie: Why'd you do that? We need the money for the store.

Stacy: Social Rule Model - Pauses, looks into the distance where the teacher walked off, looks at the blind man and turns to Jamie and says: "You saw Mrs. Fischer across the street. What would she say if I didn't give him the money. Besides, my parents would expect me to give to someone needy. Grownups think it's the right thing to do."

Jamie: Oh, okay.

The two girls walk off to the store, into the distance.

For the Principled Rule Model:

Stacy: Someone has to help these blind people. Where would they be if we didn't help. If everybody gave a little, the world would be a lot better.

Silent Model Only:

Stacy just donates the money to the blind man with no questions asked by Jamie.

No Model: No modeling or rationales. Just a tape of the two girls walking along and talking.

## REFERENCES

- Ascione, F. & Sanok, R.L.(1982).The role of peer and adult models in facilitating and inhibiting children's prosocial behavior. Genetic Psychology Monographs, 106(2), 239-259.
- Bandura, A.(1977).Social learning theory. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A.(1986).Social foundations of thought and action. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A., & Jeffrey, R.W.(1973).Role of symbolic coding and rehearsal processes in observational learning. Journal of Personality and Social Psychology, 26, 122-130.
- Bar Tal, D.(1976).Prosocial behavior: theory and research. Washington, D.C., Hemisphere Publishing Corporation.
- Bar Tal, D.(1982).Sequential development of helping behavior: A cognitive learning approach. Developmental Review, 2, 104-124.
- Bar Tal, D. & Raviv, A.(1979).Consistency of helping-behavior measures. Child Development, 50(4), 1235-1238.

- Bar Tal, D., Raviv, A., & Leiser, T.(1980).The development of altruistic behavior: Empirical evidence. Developmental Psychology, 16, 516-524.
- Bar Tal, D., Sharabany, R. & Raviv, A.(1981).Cognitive basis of the development of altruistic behavior. In V. Derlega & J. Grzelak (Eds.) Cooperation and helping behavior: Theories and research: NY: Academic Press.
- Barton, E.J., Olszewski, M.J., & Madsen, J.J.(1979).The effects of adult presence on the prosocial behavior of preschool children. Child Behavior Therapy, 1(3), 271-286.
- Bryan, J.H., & Walbek, N.H.(1970).Preaching and practicing generosity: Children's actions and reactions. Child Development, 41, 329-353. (a).
- Bryan, J. H., & Walbek, N.H.(1970).The impact of words and deeds concerning altruism upon children. Child Development, 41, 747-757. (b).
- Bryan, J.H.(1971).Model affect and children's imitative altruism. Child Development, 42, 2061-2065.
- Cialdini, R.B., & Kenrick, D.T.(1976).Altruism as hedonism: A social development perspective on the relationship of negative mood state and helping. Journal of Personality and Social Psychology, 34, 907-914.

- Cialdini, R.B., Kenrick, D.T., & Baumann, D.J.(1982).Effects of mood on prosocial behavior in children and adults. In N. Eisenberg (Ed.), The development of prosocial behavior. NY: Academic Press.
- Eisenberg, N.(1982).The development of prosocial behavior. NY: Academic Press.
- Eisenberg-Berg, N., & Hand, M.(1979).The relationship of preschoolers' reasoning about prosocial moral conflicts to prosocial behavior. Child Development, 50, 356-363.
- Eisenberg-Berg, N. & Roth, K.(1980).Development of young children's prosocial moral judgment: A longitudinal follow-up. Developmental Psychology, 16(4), 375-376.
- Eisenberg-Berg, N., & Neal, C.(1981).The effects of person of the protagonist and costs of helping in children's moral judgments. Personality and Social Psychology Bulletin, 7, 17-23.
- Grusec, J.E.(1971).Power and internalization of aversive behaviors. Child Development, 42, 93-105.
- Grusec. J.E.(1972).Demand characteristics of the modeling experiment: altruism as a function of age and aggression. Journal of Personality and Social Psychology, 22(2), 139-148.

- Grusec, J. E., & Kuczynski, L.(1980).Direction of effect in socialization: A comparison of the parent vs. the child's behavior as determinants of disciplinary techniques. Developmental Psychology, 6, 1-9.
- Grusec, J. E., Kuczynski, L., Rushton, J. P., & Simutis, Z. (1978).Modeling, direct instruction and attributions: Effects on altruism. Developmental Psychology, 14, 51-57.
- Grusec, J. & Redler, E.(1980).Attribution, reinforcement and altruism: A developmental analysis. Developmental Psychology, 16, 525-534.
- Grusec, J. E., Saas-Kortsaak, P., & Simutis, Z.M.(1978).The role of example and moral exhortation in the training of altruism. Child Development, 49, 920-923.
- Grusec, J. E., & Skubiski, S. L.(1970).Model nurturance, demand characteristics of the modeling experiment and altruism. Journal of Personality and Social Psychology, 14, 352-359.
- Hartup, W.W. & Coates, B.(1967).Imitation of peers as a function of reinforcement from the peer group and the rewardingness of the model. Child Development, 38, 1003-1016.
- Hoffman, M.L.(1970).Moral development. In P. Mussen (Ed.), Carmichael's manual of child psychology, 2, New York, Wiley, 261-359.

- Kohlberg, L.(1969).Stage and sequence:The cognitive developmental approach to socialization. In D.A. Goslin (Ed.), Handbook of socialization theory and research. Chicago: Rand Mc Nally.
- Liebert, R. M.(1979).Moral development: A theoretical and empirical analysis. In G. J. Whitehurst and B. J. Zimmerman (Eds.), Functions of language and cognition, New York: Academic Press.
- Midlarsky, E., & Bryan, J.H.(1967).Training charity in children. Journal of Personality and Social Psychology, 5, 408-415.
- Midlarsky, E., & Bryan, J.H.(1972).Affect expressions and children's imitative altruism. Journal of Experimental Research in Personality, 6(2-3), 195-203.
- Mischel, W.(1983).Delay of gratification as process and as person variable in development. In D. Magnusson and V.P. Allen (Eds.), Human Development: An interactional perspective. New York, Academic Press, 149-165.
- Mussen, P. H., & Eisenberg-Berg, N.(1977)..Roots of caring, sharing and helping. San Francisco, Calif: Freeman.
- Piaget, P.(1932).The moral judgment of the child. London: Routledge and Keagan Paul.

- Reynolds, H.T.(1977). Analysis of Nominal Data, 2nd ed.  
Beverly Hills, Sage Publishers.
- Rosenthal, T. L., & Zimmerman, B. J.(1978).Social learning  
and cognition. New York: Academic Press.
- Rosenhan, D., & White, G. M.(1967).Observation and rehearsal  
as determinants of prosocial behavior. Journal of  
Personality and Social Psychology, 5, 424-431.
- Rushton, P. J.(1982).Social learning theory and the  
development of prosocial behavior. In N. Eisenberg  
(Ed.), The development of prosocial behavior. NY:  
Academic Press.
- Rushton, J.P.(1976).Socialization and the altruistic behavior  
of children. Psychological bulletin, 83(5), 898-913.
- Whitehurst, G., & Zimmerman, B.J.(1979).Functions of language  
and cognition. New York: Academic Press, Inc.
- Wispe, A.(1972).Sympathy, altruism and helping behaviors.  
Academic Press. New York.
- Yando, R., Seitz, V., & Zeigler, E. (1978). Imitation: A  
developmental perspective. Hillsdale, N. J.: Erlbaum.
- Zimmerman, B. J.(1982).Children's sensitivity to feelings of  
others, their helping actions and prosocial reasoning:  
developmental assessment model. Prepared for MediAx  
Associates., Sept.

- Zimmerman, B. J. (1979). Concepts and classification. In G.L. Whitehurst and B. J. Zimmerman (Eds.) Functions of language and cognition. New York: Academic Press.
- Zimmerman, B.J. (1983). Social learning theory: A contextualist account of cognitive functioning. In C. J. Brainerd (Ed.) Recent advances in cognitive developmental theory. New York: Springer-Verlag.
- Zimmerman, B.J., and Kindsler, K.(1979). Effects of exposure to a punished model and verbal prohibitions on children's toy play. Journal of Educational Psychology, 71, 388-395.
- Zimmerman, B.J., & Koussa, R.(1979).Social influences on children's toy preferences: effects of model rewardingness and affect. Contemporary Educational Psychology, 4, 55-66.
- Zimmerman, B. J., & Koussa, R.(1975).Sex factors in children's observational learning of value judgments of toys. Sex Roles, 1(2), 121-132.
- Zimmerman, B.J., & Rosenthal, T.L.(1974).Observational learning of rule governed behavior by children. Psychological Bulletin, 81(1), 29-42.
- Zimmerman, B.J., and Whitehurst, G.(1979).Structure & Function: A comparison of two views of the development of language and cognition. Functions of Language & Cognition. New York: Academic Press, Inc.